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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/542,850	06/13/2006	Hans-Detlef Luginsland	274669US0PCT	5763
22850	7590	08/29/2007	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.			PARVINI, PEGAH	
1940 DUKE STREET			ART UNIT	PAPER NUMBER
ALEXANDRIA, VA 22314			1755	
			NOTIFICATION DATE	DELIVERY MODE
			08/29/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/542,850	Applicant(s) LUGINSLAND ET AL.	
	Examiner Pegah Parvini	Art Unit 1755	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 June 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8, 18, 19 and 21-31 is/are pending in the application.
- 4a) Of the above claim(s) 9-17 and 20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 18, 19 and 21-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>20051020</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Group I, claims 1-8 and 21-31 in the reply filed on June 22, 2007 is acknowledged. The traversal is on the ground(s) that the product and the process of making are interdependent. This is not found persuasive because the process does not necessarily make the claimed product; therefore, they do not share a technical feature.

The requirement is still deemed proper and is therefore made FINAL.

It is further noted that claims 18-19, also drawn to the product of Group I, have been included in Group I as well and are examined as set forth in this Office Action.

Claims 9-17, and 20 are withdrawn from further consideration as being drawn to a non-elected group of claims.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

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A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 1-8, 18-19, 21-23, and 27 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-9, 16-18, and 19-21 of copending Application No. 10/542,763. Although the conflicting claims are not identical, they are not patentably distinct from each other because there are overlapping ranges between the physical and chemical properties claimed for precipitated silica in both applications; furthermore, both applications claim same structure for organosilanes used to modify silica. Moreover, they both claim the same intended use for the claimed precipitated silica such as in vulcanizable rubber.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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5. Claims 1-8, 18-19, and 21-31 rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 5,846,506 to Esch et al. in view of US Patent No. 5,935,543 to Boyer et al.

6. Regarding claim 1, Esch et al. disclose precipitated silica with the physiochemical properties such as BET surface area of 35 to 350 m²/g, CTAB surface area of 30 to 350 m²/g, BET/CTAB surface area ratio of 0.8 to 1.1, DBP value of 150 to 300 ml/100 g, Sears value of 6 to 20 (column 1, lines 42-67; column 2, lines 12-20, 30-41). The ratio of Sears value to BET, as calculated, is found to be between 0.0571 to 0.17 (6/35 and 20/350).

Esch et al. teach a composition having overlapping ranges of physiochemical properties for the same composition with instant claims. Even though the reference does not disclose an anticipatory example or range which are sufficiently specific to anticipate the present claims, as noted above, the reference teaches overlapping ranges of physiochemical properties for the same composition with the present claims. Overlapping ranges have been held to establish *prima facie* obviousness. See MPEP § 2144.05. Therefore, it would have been obvious, at the time of the invention, to have selected the overlapping portion of the range because overlapping ranges have been held to establish *prima facie* obviousness. See MPEP § 2144.05.

With reference to moisture level, it is noted that the Esch et al. disclose substantially similar precipitated silica with overlapping ranges in the disclosed physiochemical properties for the same composition, precipitated silica, which has

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substantially similar intended use. The prior art do not expressly disclose a moisture level; however, Esch et al. disclose a substantially similar process of making (column 2, lines 42-65) for the precipitated silica which has similar intended use such as in vulcanizable rubber mixture. Esch et al., further, disclose that said invention exhibit better properties such as higher modulus, lower $\tan \delta$ as a measure of tire rolling resistance, better abrasion resistance, better heat build-up performance and more (column 5, lines 46-54).

Furthermore, Boyer et al., also drawn to precipitated silica having similar physiochemical properties such as overlapping ranges of CTAB, 140 to 185 m²/g, and DBP, 210 to 310 cm³/g, expressly disclose that variations in the parameters and/or conditions during production result in variations in the types of precipitated silica produced (Abstract; column 1, lines 20-23; column 2, lines 12-15, 25-2).

Therefore, at the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify Esch et al. in order to include the moisture level of 4-8% motivated by the fact that Boyer et al., also drawn to the same field of art, teach that different properties can be achieved by variations in parameters and/or conditions during production.

7. Regarding claim 2, Esch et al. disclose BET/CATB ratio of 0.8 to 1.1 (column 1, lines 45-55; column 2, lines 31-41).

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8. Regarding claim 3, Esch et al. disclose Sears value of 6 to 20 (column 1, lines 45-55; column 2, lines 13-20).
9. Regarding claim 4, Esch et al. disclose CTAB surface area of 30 to 350 m²/g (column 1, lines 45-55). Moreover, Boyer et al. disclose CTAB surface area of 160 to 185 (column 2, lines 25-27, 31-41).
10. Regarding claim 5, Esch et al. disclose DBP value of 150 to 300 (column 1, lines 45-55). In addition, Boyer et al. disclose DBP value of from 210 to 310 (column 1, lines 21-22).
11. Regarding claims 6-7, Esch et al. disclose BET surface area of 35 to 350 m²/g (column 1, lines 45-55; column 2, lines 13-20, 31-41).
12. Regarding claim 8, Esch et al. disclose ratio of Sears value to BET of between 0.0571 to 0.17 considering $6/35 = 0.17$ and $20-350 = 0.0571$ (column 1, lines 45-55; column 2, lines 13-20).
13. Regarding claim 18, Esch et al. disclose the same structure for the organosilanes used to modify precipitated silica (column 2, lines 66-67; column 3, lines 1-31).

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14. Regarding claim 19, Esch et al. disclose a similar organosilane compound, used to modify precipitated silica, based on formula (III), $R_n^1(RO)_{3-n}Si(Alkenyl)$, in which $n=3$ and R^1 : alkyl (column 3, lines 5-14). It is noted that based on the recitation of claim 19 of "... $SiR_{4-n}^2X_n$ (where $n=1, 2, 3, 4$)..." as one type of organosilanes, and considering $n=1$, X :alkenyl, and R^2 :alkyl, Esch et al. reads on the limitations of claim 19.

15. Regarding claim 21, Esch et al. teach the use of disclosed precipitated silica into vulcanizable rubber compounds as well as tires, V-belts, shoe soles, and more (column 3, lines 42-45; column 4, lines 30-33).

16. Regarding claim 22, Boyer et al. teach the use of disclosed precipitated silica to form battery separator (Abstract; column 1, lines 17-23; column 2, lines 12-15).

17. Regarding claims 23 and 25-26, Esch et al. disclose a vulcanizable rubber compounds comprising of disclosed precipitated silica having substantially overlapping ranges of the physiochemical properties as discussed in details above (column 1, lines 40-67; column 2, lines 13-20, 31-41; column 3, lines 42-45).

Esch et al. teach a substantially similar structure for the organosilanes used to modify precipitated silica as discussed in details above (column 2, lines 65-67; column 3, lines 1-31).

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18. Regarding claim 24, Esch et al., as discussed in details above, disclose precipitated silica having substantially overlapping ranges of physiochemical properties as claimed in claim 1.

Furthermore, claim 24 is a product-by-process claim. With reference to product-by-process claims, MPEP states:

"[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process."

19. Regarding claim 27, Esch et al. disclose that modification with organosilanes may be performed in mixtures of 0.5 to 50 parts of organosilanes, related to 100 parts of precipitated silica, in particular 2-15 parts, related to 100 parts of precipitated silica, wherein the reaction between the precipitated silica and silane may be performed during compounding (in situ) or outside the compounding process (premodified).

20. Regarding claim 28, Esch et al., as discussed in details above, disclose vulcanizable rubber compounds which have the precipitated silica being incorporated into them (column 1, lines 40-67; column 2, lines 12-20, 31-41; column 3, lines 42-45; column 4, lines 30-33).

21. Regarding claim 29, Esch et al. disclose the claimed precipitated silica and its properties, as discussed in details above; furthermore, the prior art disclose

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incorporating/adding it into vulcanizable rubber compounds (column 1, lines 40-67; column 2, lines 12-20, 31-41; column 3, lines 42-45; column 4, lines 30-33).

22. Regarding claims 30-31, the combination of Esch et al. and Boyer et al. disclose the use of precipitated silica, having substantially overlapping physiochemical properties as discussed in details above, into a batter separator.

23. Claims 1-8, 18-19, 21, are 23-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 5,846,506 to Esch et al. in view of US Patent Application Publication No. 2002/0022693 to Luginsland.

24. Regarding claim 1, Esch et al. teach precipitated silica with the physiochemical properties such as BET surface area of 35 to 350 m²/g, CTAB surface area of 30 to 350 m²/g, BET/CTAB surface area ratio of 0.8 to 1.1, DBP value of 150 to 300 ml/100 g, Sears value of 6 to 20 (column 1, lines 42-67; column 2, lines 12-20, 30-41). The ratio of Sears value to BET, as calculated, is found to be between 0.0571 to 0.17 (6/35 and 20/350).

Esch et al. teach a composition having overlapping ranges of physiochemical properties for the same composition with instant claims. Even though the reference does not disclose an anticipatory example or range which are sufficiently specific to anticipate the present claims, as noted above, the reference teaches overlapping

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ranges of physiochemical properties for the same composition with the present claims. Overlapping ranges have been held to establish *prima facie* obviousness. See MPEP § 2144.05. Therefore, it would have been obvious, at the time of the invention, to have selected the overlapping portion of the range because overlapping ranges have been held to establish *prima facie* obviousness. See MPEP § 2144.05.

Esch et al. does not expressly disclose a moisture level of 4-8% for precipitated silica.

Luginsland, also drawn to the same field of art, disclose a surface-treated hydrophobic, precipitated silica, having BET surface area of from 50 to 500 m²/g and a DBP adsorption of from 200 to 350 g/100g, and a moisture content of from 2 to 6%, preferably from 2.5 to 3.5% ([0012]). Luginsland, in addition, disclose the use of said precipitated silica in rubber compositions ([0014]).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to modify Esch et al. in order to include the moisture level of precipitated silica as that taught by Luginsland motivated by the fact that Luginsland teaches that its invention provides an organosilicon mixture that has improved storage stability which is main factor in rubber technology ([0005], [0006], [0009]).

25. Regarding claim 2, Esch et al. disclose BET/CATB ratio of 0.8 to 1.1 (column 1, lines 45-55; column 2, lines 31-41).

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26. Regarding claim 3, Esch et al. disclose Sears value of 6 to 20 (column 1, lines 45-55; column 2, lines 13-20).

27. Regarding claim 4, Esch et al. disclose CTAB surface area of 30 to 350 m²/g (column 1, lines 45-55).

28. Regarding claim 5, Esch et al. disclose DBP value of 150 to 300 (column 1, lines 45-55). Luginsland teaches precipitated silica having DBP value of preferably from 210 to 250 g/100 g ([0012]).

29. Regarding claims 6-7, Esch et al. disclose BET surface area of 35 to 350 m²/g (column 1, lines 45-55; column 2, lines 13-20, 31-41). Luginsland discloses BET surface area of from 50 to 200 m²/g, preferably from 80 to 120 m²/g ([0012]).

30. Regarding claim 8, Esch et al. disclose ratio of Sears value to BET of between 0.0571 to 0.17 considering $6/35 = 0.17$ and $20-350 = 0.0571$ (column 1, lines 45-55; column 2, lines 13-20).

31. Regarding claim 18, Esch et al. disclose the same structure for the organosilanes used to modify precipitated silica (column 2, lines 66-67; column 3, lines 1-31).

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32. Regarding claim 19, Esch et al. disclose a similar organosilane compound, used to modify precipitated silica, based on formula (III), $R_n^1(RO)_{3-n}Si(Alkenyl)$, in which $n=3$ and R^1 : alkyl (column 3, lines 5-14). It is noted that based on the recitation of claim 19 of "... $SiR_{4-n}^2X_n$ (where $n=1, 2, 3, 4$)..." as one type of organosilanes, and considering $n=1$, X :alkenyl, and R^2 :alkyl, Esch et al. reads on the limitations of claim 19.

33. Regarding claim 21, Esch et al. teach the use of disclosed precipitated silica into vulcanizable rubber compounds as well as tires, V-belts, shoe soles, and more (column 3, lines 42-45; column 4, lines 30-33). Moreover, Luginsland discloses the use of precipitated silica in tires, tire treads, cable coverings, drive belts, damping elements, and more ([0018]).

34. Regarding claims 23 and 25-26, Esch et al. disclose a vulcanizable rubber compounds comprising of disclosed precipitated silica having substantially overlapping ranges of the physiochemical properties as discussed in details above (column 1, lines 40-67; column 2, lines 13-20, 31-41; column 3, lines 42-45).

Esch et al. teach a substantially similar structure for the organosilanes used to modify precipitated silica as discussed in details above (column 2, lines 65-67; column 3, lines 1-31).

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35. Regarding claim 24, Esch et al., as discussed in details above, disclose precipitated silica having substantially overlapping ranges of physiochemical properties as claimed in claim 1.

Furthermore, claim 24 is a product-by-process claim. With reference to product-by-process claims, MPEP states:

"[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process."

36. Regarding claim 27, Esch et al. disclose that modification with organosilanes may be performed in mixtures of 0.5 to 50 parts of organosilanes, related to 100 parts of precipitated silica, in particular 2-15 parts, related to 100 parts of precipitated silica, wherein the reaction between the precipitated silica and silane may be performed during compounding (in situ) or outside the compounding process (premodified).

37. Regarding claim 28, Esch et al., as discussed in details above, disclose vulcanizable rubber compounds which have the precipitated silica being incorporated into them (column 1, lines 40-67; column 2, lines 12-20, 31-41; column 3, lines 42-45; column 4, lines 30-33). In addition, Luginsland discloses the damping element, tire treads, conveyer belts, shoe soles and more being made from incorporating precipitated silica into them ([0018]).

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38. Regarding claim 29, Esch et al. disclose the claimed precipitated silica and its properties, as discussed in details above; furthermore, the prior art disclose incorporating/adding it into vulcanizable rubber compounds (column 1, lines 40-67; column 2, lines 12-20, 31-41; column 3, lines 42-45; column 4, lines 30-33).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US Patent Application Publication No. 2002/0169248 to Esch et al.

US Patent No. 5,925,708 to Esch et al.

US Patent No. 6,624,230 to Luginsland

US Patent No. 6,077,466 to Türk et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pegah Parvini whose telephone number is 571-272-2639. The examiner can normally be reached on Monday to Friday 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on 571-272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

PP



J.A. LOBENGO
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